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ABSTRACT

This report is based on the analysis of 39 items from the Comprehensive School Mathematics Program (CSMP) storybooks and story-workbooks. In most cases, three samples were taken from each item; a total of 105 samples equaling 1,050 words were analyzed. Two instruments were applied to each sample: (1) FRY, designed to measure sentence length and number of syllables per word, and (2) SPACHE, designed to measure common and uncommon words. In reviewing all data collected, three conclusions were drawn: (1) 14 stories (36%) were above grade level on the SPACHE, but all items were within two grade levels of the target population, an acceptable range; (2) 19 stories (49%) were below grade level on the SPACHE, again within the 2-year range; and (3) the most common area of difficulty is the use of high-level descriptive terms such as suspiciously, fiercely, imaginative, etc. An item analysis and four graphs are included in the report. (MNS)

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Readability Study

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The following readability report was prepared by Eileen Ostergaard, Co-director of Project Reading Power in the Content Areas, University of Minnesota.

This report is based upon the analysis of 39 items from the CSMP Student Materials. Only the storybooks and the story-workbooks were analyzed. In most cases, 3 samples were taken from each item. A total of 105 samples equaling 1,050 words were analyzed.

Two instruments were applied to each sample. They are:

FRY	**This instrument is designed to measure sentence length and number of syllables per word. This measure is appropriate for materials ranging from first to college level.**
SPACHE	**This instrument is designed to measure common and uncommon words and is appropriate for materials from first to fourth grades. Due to this limitation, several samples are reported as 4th +.**

In reviewing all data collected, the following conclusions were drawn:

A. Fourteen stories (36%) were above grade level on the SPACHE; however, all items were within two grade levels of the target population, an acceptable range for most students.

B. Nineteen stories (49%) were below grade level on the SPACHE, again within the two year range. This level may be most desirable due to the concepts being presented.

C. The most common area of difficulty is the use of high level descriptive terms such as: *suspiciously, received, fiercely, immediately, calculating, imaginative, especially, concluded, muses, marvelous, observed, amazed, retorted, fascinating, annoyed, convinced, optimistic.*

In an effort to show the results of the analysis, the following graphs are attached to this report:

I. The relationship between the SPACHE Readability Level and CSMP's suggested level of use. Composite scores were used.

II. The relationship between the FRY and SPACHE formulas on the CSMP storybooks designed for ages 5 to 8.

III. The relationship between the FRY and SPACHE Formulas on the CSMP storybooks designed for ages 8 to 12.

IV. The relationship between the FRY and SPACHE formulas on the CSMP storybooks designed for ages 10 to 14.

V. The relationship between the FRY and SPACHE formulas on the CSMP story-workbooks designed for ages 8 to 11.

VI. The relationship between FRY and SPACHE formulas on the CSMP story-workbooks designed for ages 9 to 14.

Item Analysis

81 Roses	Suggested level: Kindergarten to first. Three Samples were analyzed. FRY range was third grade. SPACHE: 2.3. Level should be appropriate as materials are designed to be read to the student.
The Playful Numbers	This item did not contain print. Not included in the analysis.
The Baby is Born	Suggested level: Kindergarten. Three 100 word samples were analyzed. FRY range: Second to fourth. SPACHE: 1.9 to 3.2. Although this story is to be read to the students it may be too difficult for some children.
One Out of Seven	Suggested level: First grade. Three 100 word samples were analyzed. FRY range: Second to fifth. SPACHE: Second to third. Again this book may cause difficulty for some children.
The Little Dreamer	Suggested level: First grade. Three 100 word samples were analyzed. FRY range: Third grade. SPACHE: 2.8. Appropriate if story is to be read to students.
The Weird Story of 24	Suggested level: First grade. Three 100 word samples. FRY: Third to fifth grade. SPACHE: 2.7 to 3.3 grade. Appropriate if story is to be read to students.
I Am A Very Happy Boy	Suggested level: First grade. Three 100 word samples. FRY: Third grade. SPACHE: 2.7 to 3.3 grade. Appropriate if story is to be read to students.
Where's My Nose?	Suggested level: Second grade. Three 100 word samples. FRY: Third grade. SPACHE: 2.3. Appropriate for target population.
The Happy Puppet	Suggested level: Second grade. Three 100 word samples. FRY: Second grade. SPACHE: 2.6. Appropriate for target population.

Summer School In The Old Days	Suggested level: Second grade. Three 100 word samples. FRY: Fifth to seventh grade. SPACHE: 3.1 to 4th+. May be too difficult for the majority of second graders.
Summer School - O's Discovery	Suggested level: Second grade. Due to fewer printed words only two 100 word samples were analyzed. FRY: Sixth to seventh grade. SPACHE: 3.4 to 4th+. May be too difficult for the majority of second graders.
The Magic Box	Suggested Level: Second grade. Three 100 word samples. FRY: Third to seventh grade. SPACHE: 2.7 to 3.2. May be too difficult for the majority of second grade students.
Roller Skating 37	Suggested level: Third grade. Due to number of printed words available, only two 100 word samples were analyzed. FRY: Second grade. SPACHE: 2.7 to 3.2. Appropriate for target population.
The Little Donkey	Suggested level: Third grade. Three 100 word samples. FRY: Fourth to fifth grade. SPACHE: 2.9 to 3.2. May be too difficult for the average third grade student.
Singing Friends	Suggested level: Third grade. Three 100 word samples. FRY: Third to fourth grade. SPACHE: 2.1 to 2.7. Appropriate for target group.
To Picture	Suggested level: Third grade. Three 100 word samples. FRY: Second to fourth grade. SPACHE: 2.9 to 3.2. Appropriate for target group.
Dancing Friends	Suggested level: Third grade. Three 100 word samples. FRY: Fourth to fifth grade. SPACHE: 2.5 to 3.1. May be too difficult for the average third grade student.
I Am Not My Name	Suggested level: Third grade. Three 100 word samples were analyzed. FRY: Second to fourth. SPACHE: 2 to 3.1. Appropriate for target population.
The Square Trap	Suggested level: Fourth grade. Three 100 word samples. FRY: Second to sixth grade. SPACHE: 2.6 to 3.4. May cause difficulty for lower students.

A Book About Me	Suggested level: Fourth grade. Due to lack of print in this item only one 100 word sample was analyzed. FRY: Third. SPACHE: 2.9. Appropriate.
Halloween Puzzles	Suggested level: Fourth grade. Three 100 word samples were analyzed. FRY: First to third. SPACHE: 2.2 to 3.2. Appropriate.
Summer Camp	Suggested level: Fourth grade. Three 100 word samples were analyzed. FRY: First to third. SPACHE: 2.2 to 3.2. Appropriate.
Not Too Close	Suggested level: Fourth grade. Three 100 word samples. FRY: Second to fourth. SPACHE: 2.5 to 3.2. Very appropriate.
Who Are We?	Suggested level: Fourth grade. Due to lack of print material only 100 words were sampled. FRY: First grade. SPACHE: 1.8. May be too easy for the average fourth grade student.
Nabu Wins An Award	Suggested level: Fourth grade. Three 100 word samples. FRY: Fifth to sixth. SPACHE: 2.7 to 3.8. Appropriate for target population if terms are explained.
Clinton Street A	Suggested level: Fourth grade. Three 100 word samples. FRY: Fourth to seventh grade. SPACHE: 3.4 to 4th +. May be too difficult for some fourth graders.
Clinton Street B	Suggested level: Fourth grade. Due to limited number of printed words only two 100 word samples were analyzed. FRY: Sixth grade. SPACHE: 4th +. May be too difficult for some fourth grade students.
A Strange Country	Suggested level: Fourth grade. Three 100 word samples. FRY: Fifth to seventh grade. SPACHE: 2.9 to fourth grade. Appropriate for target group.
Number 1,000's Dream	Suggested level: Fifth grade. Three 100 word samples. FRY: Second to fourth grade. SPACHE: 2.2 to third grade. Appropriate to easy.
Seven Secret Numbers	Suggested level: Fifth grade. Due to the limited number of printed words only two 100 word samples were analyzed. FRY: Fourth to sixth grade. SPACHE: 3 to 3.2. Appropriate to easy.

Shunda's Newsstand	**Suggested level: Fifth grade. Three 100 word samples were analyzed. FRY: Seventh to eleventh grade. SPACHE: 4th + (above the limitations of this formula). May be too difficult for the majority of target population.**
The Hidden Treasure	**Suggested level: Fifth grade. Three 100 word samples were analyzed. FRY: Third to fifth grade. SPACHE: 2.8 to 3.7. Appropriate, but may need to clarify terms used.**
A Valentine Mystery	**Suggested level: Fifth grade. Three 100 word samples were analyzed. FRY: Fourth to sixth grade. SPACHE: 3.3 to 3.6. Appropriate for target group.**
Election In the Number World	**Suggested level: Sixth grade. Three 100 word samples.** **FRY: Third to seventh grade. SPACHE: 3.3 to 3.6. Appropriate for target population.**
A Very Strange Neighborhood	**Suggested level: Sixth grade. Three 100 word samples were analyzed. FRY: Third to seventh grade. SPACHE: 2.7 to 3.7. Appropriate for target population.**
The Island of Tam-Tam	**Suggested level: Fourth grade. Due to the limited number of printed words in this item, only two 100 word samples were analyzed. FRY: Third grade. SPACHE: 3.9 to fourth. Appropriate for target group. The unfamilar proper names should be reviewed.**
Two By Two	**Suggested level: All (kindergarten to sixth). Three 100 word samples were analyzed. FRY: Second to third. SPACHE: 2.7 to 3.3. Appropriate if read to lower levels (kindergarten to first).**
The Old Shoemaker	**Suggested level: Kindergarten to third. Three 100 word samples. FRY: Second to sixth. SPACHE: 2.2 to 3.6. Appropriate if read to students. May be too difficult for students to read independently.**

*Only SPACHE is used here because there's more research that suggests the validity of SPACHE for the lower grades.

CSMP
Storybooks
Ages 5-8

CSMP
Storybooks
Ages 8-12

FRY READABILITY
SPACHE READABILITY

CSMP
Storybooks
Ages 10-14

CSMP
Story - Workbooks
Ages 8 - 11

_____FRY READABILITY
-------- SPACHE READABILITY

CSMP
Story - Workbooks
Ages 9 - 14